WHAT IS CLAIMED IS:

1. A production method of a sequentially joined-segment stator coil of a rotary electric machine comprising:

preparing segments each including a head and a pair of legs extending straight in parallel to each other from ends of the head, the head being made up of a substantially U-shaped tip portion and a pair of head straight portions extending from the tip portion in alignment with the legs;

preparing a plurality of rings arrayed coaxially with each other to be rotatable relative to each other;

holding the legs of each of the segments in the rings, respectively;

catching the tip portion of the head of each of the segments through a pair of tines in abutment to the tip portion in a circumferential direction of said rings, the tines being installed on a head press member which is disposed away from said rings in an axial direction of the rings and so designed as to be movable selectively to and away from said rings;

moving said head press member toward said rings and, at the same time, rotating said rings in opposite directions to spread the legs of each of the segments through a given angle, thereby twisting the head straight portions of each of the heads to form head slant portions;

removing said segments from the rings and the tines and inserting said segments into slots in a stator core; and

joining said segments in said stator core in sequence to complete a stator coil,

wherein the head press member retains each of the pairs of tines to be rotatable about an axis extending in alignment with an axis about which the rings rotate, each of the pairs of tines being allowed to rotate following rotation of the rings.

2. A sequentially joined-segment stator coil of a rotary electric machine produced by the production method as set forth in claim 1, wherein an angle, as measured from a vertex defined on an axis of the stator coil, between a center of the tip portion of the head of each of the segments as defined in a circumferential direction of the stator coil and an outer one of the legs of the segment is smaller than an angle between said center and an inner one of the legs.

3. A production method of a sequentially joined-segment stator coil of a rotary electric machine comprising:

preparing segments each including a head and a pair of legs extending straight in parallel to each other from ends of the head, the head being made up of a substantially U-shaped tip portion and a pair of head straight portions extending from the tip portion in alignment with the legs;

preparing a plurality of rings arrayed coaxially with each other to be rotatable relative to each other;

holding the legs of each of the segments in the rings, respectively;

catching the tip portion of the head of each of the segments through a pair of tines in abutment to the tip portion in a circumferential direction of said rings, the tines being installed on a head press member which is disposed away from said rings in an axial direction of the rings and so designed as to be movable selectively to and away from said rings;

moving said head press member toward said rings and, at the same time, rotating said rings in opposite directions to spread the legs of each of the segments through a given angle, thereby twisting the head straight portions of each of the heads to form head slant portions;

removing said segments from the rings and the tines and inserting said segments into slots in a stator core; and

joining said segments in said stator core in sequence to complete a stator coil,

wherein one of each pair of the tines which is urged inwardly of the rings by the tip portion of the head of a corresponding one of the segments has a first chamfered surface to abut to the tip portion, and the other tine which is urged outward of the rings by the tip portion of the head of the corresponding one of the segments has a second chamfered surface to abut to the tip portion, the first chamfered surface being greater in area than the second chamfered surface.

4. A sequentially joined-segment stator coil of a rotary electrical machine comprising:

a stator core having opposed ends and slots formed at given intervals in a circumferential direction of the stator core, each of the slots defining therein even segment-inserted positions which are aligned in a radius direction of said stator core;

a plurality of segments placed in the slots of said stator core, said segments being joined in sequence to form turns of each of *M* (= three or more) phase coils, each of said segments including a pair of conductor portions each of which is inserted into one of two of the slots spaced from each other at a given interval, a head portion extending from the pair of conductor portions outside one of the ends of said stator core to form a segment head-side coil end, and a pair of end portions each of which extends from one of the pair of conductor portions outside the other end of said stator core to form a segment end-side coil end, each of the head portions being made up of a substantially U-shaped tip portion and a pair of slant portions which continue from ends of the head portion, slant to a circumferential and an axial direction of said stator core, and lead to the conductor portions, respectively, each of the end portions being made up of slant end portions slanting from said two of the slots to the circumferential and axial directions and tips each of which continues from one of the slant end portions and is joined to one of the tips of the end portions of another of the segments, the segment head-side coil end including a plurality of sets of the head portions arrayed in the radius direction of the stator core, as viewed in the circumferential direction of the stator core, the segment end-side coil end including a plurality of sets of the end portions arrayed in

the radius direction, as viewed in the circumferential direction of the stator core,

wherein a boundary portion between the tip of the head of each of the segments and an outer one of the slant portions of the head of said each of the segments has a radius of curvature greater than that of a boundary portion between the tip of the head of each of the segments and an inner one of the slant portions of the head of said each of the segments, as measured in the axial direction of the stator core.

5. A sequentially joined-segment stator coil as set forth in claim 2 or 4, wherein said segments are broken down into a plurality of segment sets each made up of a small-sized segment with a small head and a large-sized segment with a large head extending over the small head of the small-sized segment in the circumferential direction of the stator core, the segment sets being broken down into a plurality of segment set groups arrayed in the radius direction of the stator core, the segment sets in each of the segment set groups being arrayed in the circumferential direction of the stator core, each of the segment set groups forming partial phase windings to which given phase voltages are applied, respectively, and wherein each of the phase coils includes ones of the partial phase windings which are arrayed in the radius direction of the stator core and joined in series.

6. A sequentially joined-segment stator coil as set forth in claim

5, wherein the slots are broken down into same phase slot groups each of which has placed therein the conductor portions of the segments to which the same phase voltage is applied, the slots in each of the same phase slot groups being arrayed adjacent to each other in the circumferential direction of the stator core, and wherein the partial phase windings arrayed in the radius direction of the stator core within each of the slots of each of the same phase slot groups are joined in series to form a series-connected phase coil circuit, the series-connected phase coil circuits placed respectively within the slots of each of the same phase slot groups being joined in parallel to form each of the phase coils.